Crestron Green Light™
DIN-PWS50
DIN Rail 50 Watt Cresnet® Power Supply
Operations & Installation Guide

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This document was prepared and written by the Technical Documentation department at:

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Crestron Green Light™ DIN Rail 50 Watt Cresnet® Power Supply: DIN-PWS50

Introduction

The DIN-PWS50 is a 50 Watt Cresnet® Power Supply module designed to snap onto a standard DIN rail for installation in a wall mount enclosure. DIN rail mounting enables modular installation alongside Crestron® DIN Rail lighting and automation control modules and other third party DIN rail mountable devices. All wiring connections are made using screw terminals positioned along the top and bottom, clearly accessible from the front for easy installation and servicing. Three Cresnet power ports are provided.

Features and Functions

- 50 Watt Cresnet® power supply module
- Powers the DIN Rail series of Crestron products and other Cresnet devices
- Includes three Cresnet power ports
- Cresnet data passes through unaffected
- Dual line power input terminals for easy daisy chaining
- 6M wide DIN rail mounting

Applications

The following diagram shows a DIN-PWS50 in a typical application.

DIN-PWS50 in a Typical Application
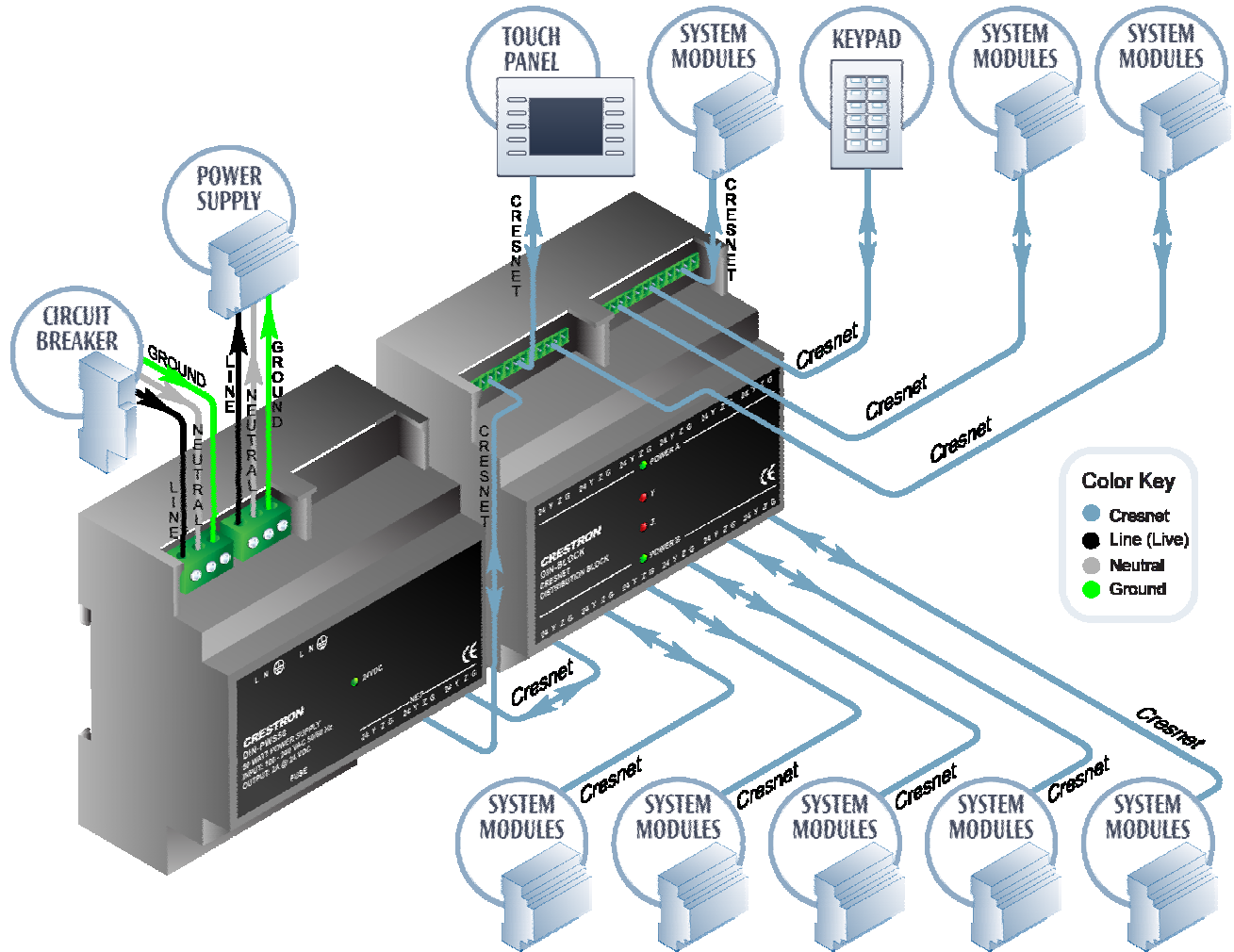
Specifications

Specifications for the DIN-PWS50 are listed in the following table.

DIN-PWS50 Specifications

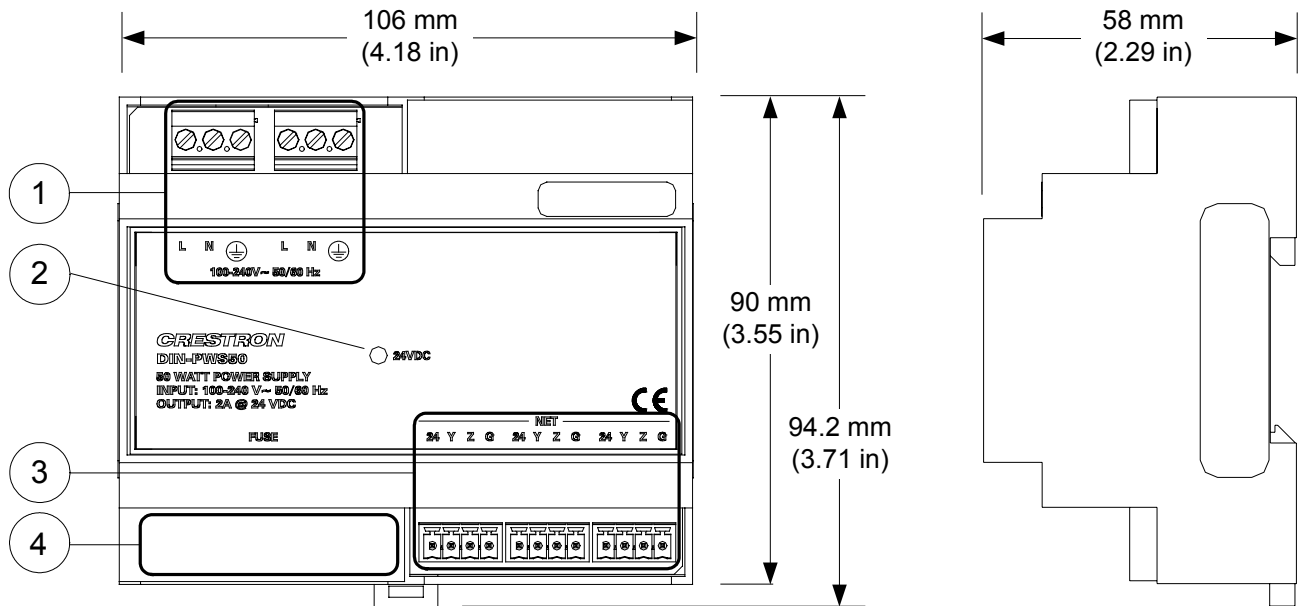| SPECIFICATION	DETAILS
Output Power	
Per Output Port	50 Watts (2.08 Amps @ 24 Volts DC, Regulated), limited power source
Module Total	50 Watts (2.08 Amps @ 24 Volts DC, Regulated)
Ripple/Noise	<1%
Power Requirements	60 Watts @ 100-240V, 50/60 Hz
Environmental	
Temperature	0º to 40º C (32º to 104º F)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	26 BTU/Hr
Enclosure	Light gray polycarbonate housing with polycarbonate label overlay, UL94 V-0 rated, 35 mm DIN EN 60715 rail mount, DIN 43880 form factor for enclosures with 45 mm front panel cutout, occupies 6 DIN module spaces (108 mm)
Dimensions	
Height	94.2 mm (3.71 in)
Width	106 mm (4.18 in)
Depth	58 mm (2.29 in)
Weight	170 g (6 oz)
Available Accessories	
DIN-BLOCK	DIN Rail Cresnet Distribution Block
DIN-HUB	DIN Rail Cresnet Distribution Hub

Physical Description

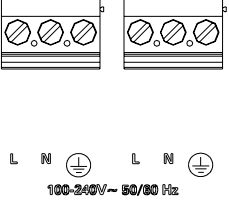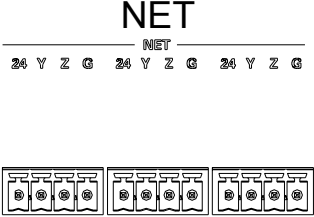This section provides information on the connections, controls and indicators available on your DIN-PWS50.

DIN-PWS50 Physical View

DIN-PWS50 Overall Dimensions

Connectors, Controls & Indicators

#	CONNECTORS*, CONTROLS & INDICATORS	DESCRIPTION
1	100-240V~50/60Hz	(2) Sets of (3) captive screw terminals, each set paralleled Line power input, neutral and ground with pass through Maximum wire size: 2.5 mm^2 (12 AWG)
2	24VDC	(1) Green LED indicates 24 Volts DC output at all **NET** ports; extinguished when fuse is blown

3	NET	(3) 4-pin 3.5 mm detachable terminal blocks, paralleled Cresnet power output ports with data pass through
		
		Connects to Cresnet control network.
		    Pin 1 (24) Power (24 Volts DC)
		    Pin 2 (Y) Data
		    Pin 3 (Z) Data
		    Pin 4 (G) Ground

4	FUSE	Main fuse (located under cover), T3.15AH (5 x 20 mm, 250V, 3.15 A, time lag, ceramic cartridge)

*   Interface connectors for **NET** ports are provided with the unit.

Industry Compliance

This unit has been manufactured to comply with UL's Standards for Safety in Canada and the United States. Formal approval is pending.

As of the date of manufacture, the DIN-PWS50 has been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling.

NOTE: This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

Setup

Network Wiring

When wiring the Cresnet® network, consider the following:

- Use Crestron Certified Wire.

  NOTE: Cresnet HP cannot be used.

- Use Crestron power supplies for Crestron equipment.
- Provide sufficient power to the system.

  CAUTION: Insufficient power can lead to unpredictable results or damage to the equipment. Please use the Crestron Power Calculator to help calculate how much power is needed for the system (www.crestron.com/calculators).

- Use of a Cresnet hub/repeater (DIN-HUB) is advised whenever the number of Cresnet devices on a network exceeds 20 or when the combined total length of Cresnet cable exceeds 914 meters (3000 feet).

For more details, refer to "Check Network Wiring" which starts on page 14.

Installation

The DIN-PWS50 must be installed by a licensed electrician, in accordance with all national and local codes.

CAUTION: This equipment is for indoor use only. Mount in a well ventilated area. The ambient temperature must be 0º to 40º C (32º to 104º F). The relative humidity must be 10% – 90% (non-condensing).

NOTE: When installing in an enclosure, high-voltage devices should be grouped separately from low-voltage devices.

The DIN-PWS50 is designed for installation on a DIN rail. Refer to the following diagram when installing.

Installing the DIN-PWS50
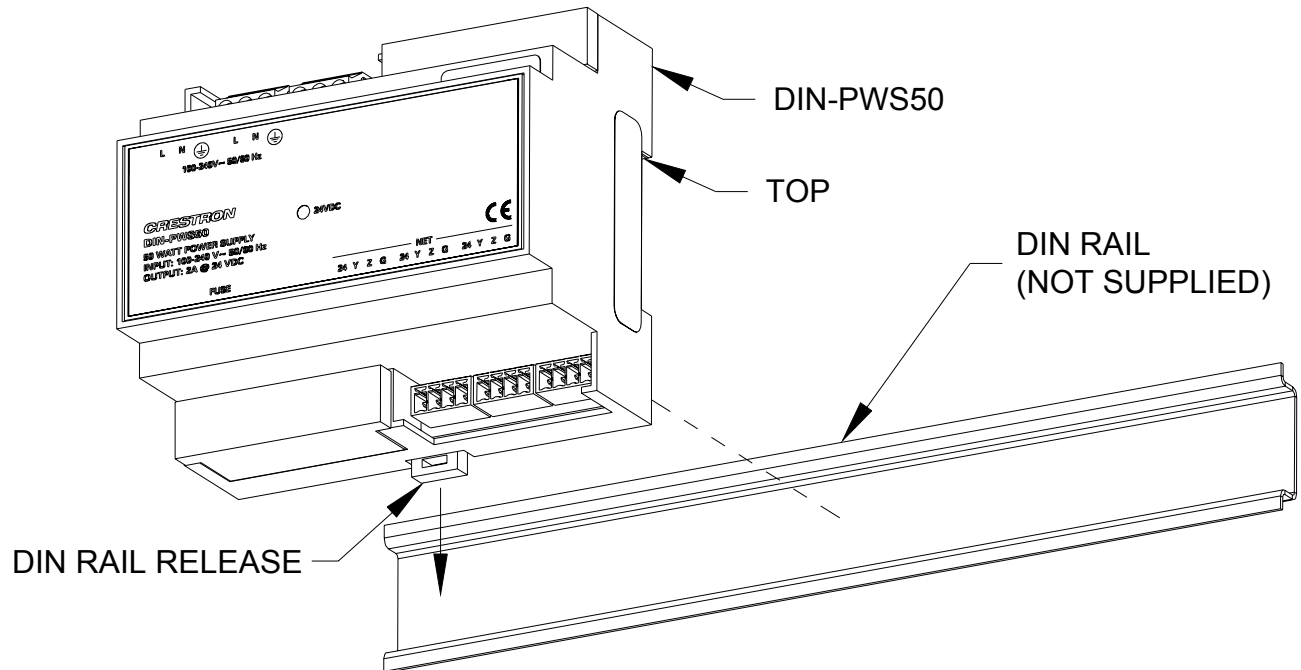
1. Place the top of the DIN-PWS50's rail mount over the top of the DIN rail.

2. Tilt the bottom of the DIN-PWS50 toward the DIN rail until it snaps into place.

   NOTE: When mounting DIN rail products, it may be necessary to use a flat-head screwdriver to pull the DIN rail release tab while snapping the device onto the DIN rail.

To remove the DIN-PWS50 from the DIN rail, use a small, flat object (i.e. a flat-head screwdriver) to pull the DIN rail release and tilt the bottom of the DIN-PWS50 away from the DIN rail.

NOTE: Certain third party DIN cabinets provide space for an informational label between each DIN rail row. Crestron's Engraver software (version 4.0 or later) can generate appropriate labels for all Crestron DIN rail products.

Hardware Hookup

Connect the Device

Make the necessary connections as called out in the illustration that follows this paragraph. Refer to "Network Wiring" on page 8 before attaching the 4-position terminal block connector. Apply power after all connections have been made.

WARNING: Prior to connecting the device, turn off power at the circuit breaker. Failure to do so may result in serious injury or damage to the device. Restore power after all connections have been made.

NOTE: Install in accordance with all local and national electric codes.

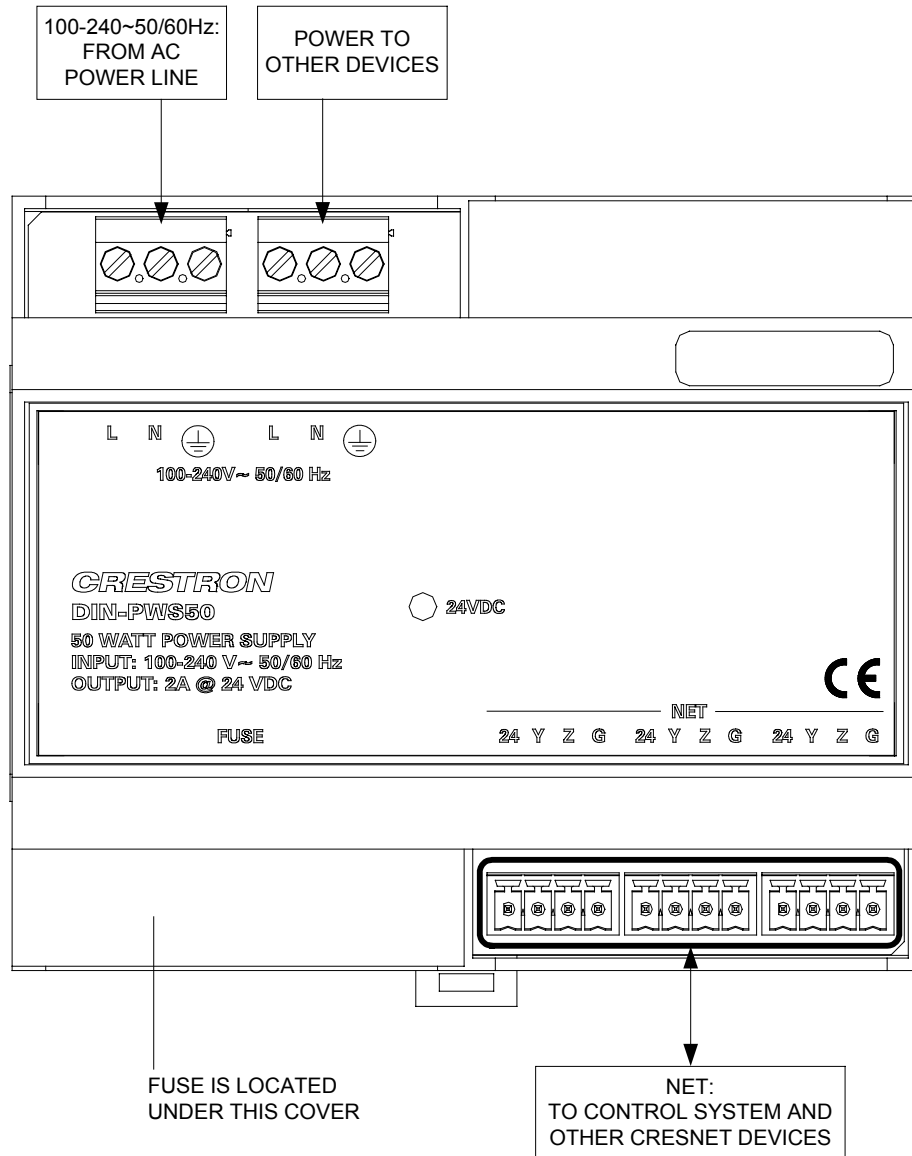**NOTE:** High-voltage connections accept 2.5 mm^2 (12 AWG) wire. Wire should be stripped to 8 mm (1/3 inch). Tighten terminal blocks to 0.5 Nm (5 in-lbs).

NOTE: Use copper wire only. For high-voltage connections, use wire rated for at least 75º C (167º F).

NOTE: Ensure the unit is properly grounded.

When making network connections to the DIN-PWS50, use a Crestron power supply.

Hardware Connections for the DIN-PWS50

100-240~50/60Hz:
FROM AC
POWER LINE

POWER TO
OTHER DEVICES

L   N   ⏚   L   N   ⏚
100-240V∼ 50/60 Hz

CRESTRON
DIN-PWS50
50 WATT POWER SUPPLY
INPUT: 100-240 V ∼ 50/60 Hz
OUTPUT: 2A @ 24 VDC

◯ 24VDC

C E

NET
FUSE   24 Y Z G   24 Y Z G   24 Y Z G

FUSE IS LOCATED
UNDER THIS COVER

NET:
TO CONTROL SYSTEM AND
OTHER CRESNET DEVICES

Fuse Replacement

If the DIN-PWS50 does not power up when it is plugged into an AC outlet, the fuse may need to be replaced. The fuse holder is located on the front panel, under the cover in the lower left corner. To replace the fuse:

1. Disconnect power to the DIN-PWS50.

2. Remove the cover from the lower left corner on the front of the DIN-PWS50.

3. Remove the defective fuse from the fuse holder and replace with a new one.

CAUTION: Use only time lag type fuses, 3.15 Amps / 250 Volts. Failure to do so may cause damage to the DIN-PWS50.

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4. Replace the fuse cover.

5. Connect power to the DIN-PWS50.

Problem Solving

Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

DIN-PWS50 Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
24VDC LED does not illuminate.	DIN-PWS50 is not receiving power.	Verify the DIN-PWS50 is connected to an AC power line.
	Fuse is blown.	Replace fuse with T3.15AH (5 x 20 mm, 250 V, 3.15 A, time lag, ceramic cartridge). Refer to "Fuse Replacement" on page 12.
	Output is short-circuited.	Disconnect all output connectors. LED will light if problem was a short circuit on output.

Check Network Wiring

Use the Right Wire

In order to ensure optimum performance over the full range of your installation topology, Crestron Certified Wire and only Crestron Certified Wire may be used. Failure to do so may incur additional charges if support is required to identify performance deficiencies because of using improper wire.

Calculate Power

CAUTION: Use only Crestron power supplies for Crestron equipment. Failure to do so could cause equipment damage or void the Crestron warranty.

CAUTION: Provide sufficient power to the system. Insufficient power can lead to unpredictable results or damage to the equipment. Please use the Crestron Power Calculator to help calculate how much power is needed for the system (www.crestron.com/calculators).

When calculating the length of wire for a particular Cresnet run, the wire gauge and the Cresnet power usage of each network unit to be connected must be taken into consideration. Use Crestron Certified Wire only. If Cresnet units are to be daisy-chained on the run, the Cresnet power usage of each network unit to be daisy-chained must be added together to determine the Cresnet power usage of the entire chain. If the unit is home-run from a Crestron system power supply network port, the Cresnet power usage of that unit is the Cresnet power usage of the entire run. The wire gauge and the Cresnet power usage of the run should be used in the following equation to calculate the cable length value on the equation's left side.

Cable Length Equation

$$L < \frac{40{,}000}{R \times P}$$

Where:
L = Length of run (or chain) in feet
R = 6 Ohms (Crestron Certified Wire: 0.75 MM^2 (18 AWG))
P = Cresnet power usage of entire run (or chain)

Make sure the cable length value is less than the value calculated on the right side of the equation. For example, a Cresnet run using 0.75 mm^2 (18 AWG) Crestron Certified Wire and drawing 20 watts should not have a length of run more than 101 meters (333 feet). Cresnet HP cannot be used.

> **NOTE:** All Crestron certified Cresnet wiring must consist of two twisted pairs. One twisted pair is the +24V conductor and the GND conductor and the other twisted pair is the Y conductor and the Z conductor.

Strip and Tin Wire

When daisy-chaining Cresnet units, strip the ends of the wires carefully to avoid nicking the conductors. Twist together the ends of the wires that share a pin on the network connector and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. Insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

Add Hubs

Use of a Cresnet hub/repeater (DIN-HUB) is advised whenever the number of Cresnet devices on a network exceeds 20 or when the combined total length of Cresnet cable exceeds 914 meters (3000 feet).

Further Inquiries

If you cannot locate specific information or have questions after reviewing this guide, please take advantage of Crestron's award winning customer service team by calling Crestron at 1-888-CRESTRON [1-888-273-7876].

You can also log onto the online help section of the Crestron website (www.crestron.com/onlinehelp) to ask questions about Crestron products. First-time users will need to establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features and extends the capabilities of the DIN-PWS50, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron website periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange or service without prior authorization from CRESTRON. To obtain warranty service for CRESTRON products, contact an authorized CRESTRON dealer. Only authorized CRESTRON dealers may contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number and return address.

2. Products may be returned for credit, exchange or service with a CRESTRON Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to CRESTRON, 6 Volvo Drive, Rockleigh, N.J. or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. CRESTRON reserves the right in its sole and absolute discretion to charge a 15% restocking fee plus shipping costs on any products returned with an RMA.

3. Return freight charges following repair of items under warranty shall be paid by CRESTRON, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

CRESTRON Limited Warranty

CRESTRON ELECTRONICS, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from CRESTRON, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touchscreen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from CRESTRON or an authorized CRESTRON dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

CRESTRON shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended or if it has been subjected to misuse, accidental damage, modification or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall CRESTRON be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. CRESTRON is not liable for any claim made by a third party or made by the purchaser for a third party.

CRESTRON shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, CRESTRON makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.

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